



Backup Assistance System

Active collision warning for manned forklift trucks

SICK
Sensor Intelligence.

Advantages



Need-based environment perception

The Backup Assistance System is based on one or two TIM3xx 2D LiDAR sensors. The sensors feature a field of view of 270°. Thanks to flexible mounting options on the vehicle, the monitored area can be adapted and scaled according to the object detection requirements.

Compared to alternative solutions, the BAS detects both stationary and moving objects.

Scalable monitored area



One sensor alone reliably detects objects behind the manned forklift truck.



A system variant with two sensors is well suited for targeted coverage of blind spots.



The use of two sensors is also recommended in environments with complex travel paths so as to provide protection for lateral areas.



The scalable monitored area enables reliable object detection, thus preventing collisions. This contributes to smooth in-house storage, handling and transport processes in logistics.

Detection of stationary and moving objects using precise LiDAR technology



Discover the various mounting options in our interactive 3D tool.

[Start interactive 3D tool >](#)



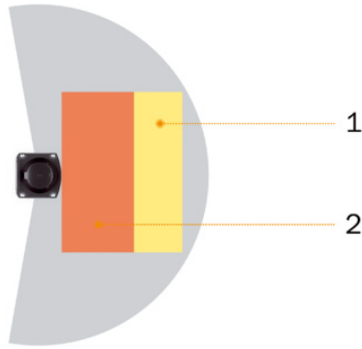
The 2D LiDAR based system actively detects obstacles in the path and clearly warns drivers and pedestrians. Unlike tag solutions, no additional sender and receiver cabling is required on the surrounding terrain. Compared to systems based on radar technology, the monitored area for collision warning can be defined more precisely with the BAS, which reduces false alarms.



Three-stage warning concept

The Backup Assistance System is equipped with a multi-stage warning concept consisting of customizable warning fields and a signal lamp that visually and acoustically warns the driver of potential collisions. The integrated 2D LiDAR sensors only switch to active monitoring when the manned forklift truck is in reverse, preventing false alarms during forward travel.

Actively warns the driver with acoustic and visual warning signals



The monitored area is divided into monitoring fields – warning field 1 and warning field 2. The warning fields can be used to monitor various individually adjustable minimum distances to an object.



The signal light bar supports the driver with visual alarms. Green means clear travel path. If an object is detected in warning field 1, the color changes to yellow; if it enters warning field 2, it changes to red. Depending on the monitored area, the lamp emits additional acoustic warning signals via an integrated up to 98 dB buzzer.



Assistance for the driver with active notifications in real time without false alarms



Compact stand-alone system

All components of the Backup Assistance System are selected to keep integration time minimal so the vehicle is quickly ready for use again. Included with delivery: Sensors, signal light bars and mounting systems for all parts and connecting cables.

Cost-effective retrofitting



Compatible with different supply voltages, the system solution can be retrofitted to a wide range of vehicles, regardless of manufacturer or year of vehicle.



To make integration into the vehicle easy and installation as quick as possible, there is only one interface to the system – the control unit regulates the voltage supply and switching.



As a result of the low current consumption by the system, the power consumption from the vehicle battery is reduced. Saving charging time and therefore money.



Compact stand-alone system for easy integration and mounting for cost-effective retrofitting



Technical data overview

Application	Indoor and outdoor areas (12 m) Indoor and outdoor areas (8 m) (depends on variant)
Ambient operating temperature	-20 °C ... +50 °C
Vehicles	Internal combustion engine (IC) / electric forklifts (depends on variant)
Monitored area	Vehicle rear end / vehicle rear end / blind spot or side cover (depends on variant)
Warning zones	2
Functions	Visual and acoustic collision warning

Product description

The Backup Assistance System (BAS) is a 2D LiDAR-based collision warning solution that helps forklift drivers to reverse safely. It monitors areas behind the vehicle and uses acoustic and visual warnings. These warnings alert the driver to stationary and moving objects. The system only activates in reverse gear to avoid distractions and false alarms when driving forward. An additional 2D LiDAR sensor enables a wider monitoring area. Thus, the BAS can be flexibly adapted to different vehicle types or areas of application. The standalone design makes it a cost-effective retrofit solution for indoor and outdoor industrial environments.

At a glance

- Precise detection of stationary and moving objects
- System only active when reversing to avoid false alarms
- Scalable setup with one or two 2D LiDAR sensors
- Two customizable warning zones per sensor
- Three-stage visual signal and acoustic signals (up to 98 dB)

Fields of application

- Prevention of rear-end accidents for industrial vehicles operating indoors and outdoors for smooth operations
- Safer reversing in confined working areas and dynamic environments with moving people and machinery

Ordering information

Other models and accessories → www.sick.com/Backup_Assistance_System

Vehicle	Monitored area	Number of sensors	Type	Part no.
Electric forklifts	Vehicle rear end	1	BAS1501-E	On request
			BAS3501-E	1117895
	Vehicle rear end Blind spot or side cover	2	BAS1502-E	On request
			BAS3502-E	1117896
Internal combustion engine (IC)	Vehicle rear end	1	BAS1501-C	On request
			BAS3501-C	1117897
	Vehicle rear end Blind spot or side cover	2	BAS1502-C	On request
			BAS3502-C	1117898

SICK AT A GLANCE

SICK is one of the leading manufacturers of intelligent sensors and sensor solutions for industrial applications. A unique range of products and services creates the perfect basis for controlling processes securely and efficiently, protecting individuals from accidents and preventing damage to the environment.

We have extensive experience in a wide range of industries and understand their processes and requirements. With intelligent sensors, we can deliver exactly what our customers need. In application centers in Europe, Asia and North America, system solutions are tested and optimized in accordance with customer specifications. All this makes us a reliable supplier and development partner.

Comprehensive services complete our offering: SICK LifeTime Services provide support throughout the machine life cycle and ensure safety and productivity.

For us, that is “Sensor Intelligence.”

WORLDWIDE PRESENCE:

Contacts and other locations –www.sick.com